

## 2.—SOME CHAETOGNATHA FROM WESTERN AUSTRALIA.

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The Chaetognatha of the Australian region have been little reported upon. Johnston and Taylor (1919) worked on material from the coasts of New South Wales and Southern Queensland. Tokioka (1940) recorded several more species from the vicinity of Sydney. The only West Australian record of the group is that by Ritter-Zahony (1910) who identified the species present in a small collection made at Shark Bay by the Hamburg Museum Expedition.

This paper records the species found in a few hauls made at Nornalup, South-western Australia in November 1939, and at Cockburn Sound near Fremantle in April, May and July 1941, by members of the Biology Department of the University of Western Australia.

These hauls were all made close in-shore. In general Chaetognatha are oceanic rather than neritic, so that poor samples are to be expected in these hauls. Two hauls made at Nornalup contained a total of only nine specimens. Of the nine hauls from Cockburn Sound, five contained no Chaetognaths, while the remaining four provided twenty-five specimens.

No fully mature examples were found, most of the specimens showing little or no development of the gonads. Russell (1936) suggested that the explanation of the abundance of immature and scarcity of adult Chaetognatha in the neritic zone, is that the young Chaetognatha habitually have their centre of distribution nearer the surface than do the adult forms (See Russell 1931) and that during the night-time they rise to the upper layers where they remain for a longer period than do the adults. Consequently any surface drift of water towards the shore such as that caused by wind, transports many young, but relatively few adults to the in-shore waters.

### *Sagitta minima* Grassi 1881.

This was the only species present in the Nornalup hauls. It was not taken at Cockburn Sound. *S. minima* occurs in the Atlantic, Pacific and Indian Oceans, approximately between 40 N. and 40 S. Usually referred to as an epi-planktonic or meso-planktonic form, this species is nevertheless common in in-shore hauls. The following table is prepared from the nine specimens taken. Only one specimen came into each of the highest and lowest classes, but as these are the class intervals which most authors have adopted for this species, it was thought desirable to retain them.

Length.	Tail (%).	Hooks.	Ant. Teeth.	Post Teeth.
7-9 mm.	17.5	7	5	10
5-7 mm.	17-19	6-8	3-4	4-6
3-5 mm.	20	7	3	4

**Sagitta enflata** Grassi 1881.

This epiplanktonic form whose distribution is similar to that of *S. minima*, was represented by four individuals taken in a bottom haul (c. 10 m.) made in Cockburn Sound on July 22nd. Their measurements were very similar. All were immature.

Length.	Tail (%).	Hooks.	Ant. Teeth.	Post. Teeth.
7.8-9.3 mm.	16-21	9-10	5-6	6-7

**Sagitta robusta** Doncaster 1902.

This is a tropical to subtropical form, usually found between 30.N and 30.S. Fifteen specimens were taken, the species being represented in all the hauls made in Cockburn Sound.

Length.	Tail (%).	Hooks.	Ant. Teeth.	Post Teeth.
7-8 mm.	26	5-7	3-4	5-7
6-7 mm.	26	8	3	5
5-6 mm.	26-27	6-8	4-5	5-6
4-5 mm.	26	6-7	3-4	4-6
3-4 mm.	28-30	6-7	3	4-5

**Sagitta bipunctata** Quoy and Gaimard 1827.

This is another epiplanktonic form which has been recorded in the Atlantic, Pacific and Indian Oceans, between 40.N and 40.S. Six specimens were present in a haul made on May 14th, 1941. All were immature.

Length.	Tail (%).	Hooks.	Ant. Teeth.	Post. Teeth.
5-6 mm.	28	7-9	5-6	6-7
4-5 mm.	27-30	7-9	3-5	5
3-4 mm.	29	7	3	4

All four of the species recorded here are of cosmopolitan distribution. Undoubtedly further work on the plankton of Western Australian waters, particularly off-shore waters, will show that the numbers and species occurring here are as great as elsewhere.

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